

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

What is claimed is:

1. (Currently Amended) A method for estimating a signal to interference ratio (SIR) of a signal transmitted from a first unit ~~and~~ to a remotely located second unit in a Wideband Code Division Multiple Access (WCDMA) wireless communication system, said signal being transmitted through an air interface and comprising pilot and data symbols, ~~characterised by the steps of the method comprising~~

verifying ~~(5.40)~~ a transmitted Transmit Power Control (TPC) command, by and  
determining if said TPC command has been correctly received, and  
weighting said pilot and data symbols; and

giving a SIR estimation ~~(5.50)~~ depending on the result of said TPC verification ~~(5.40)~~.

2. (Currently Amended) ~~[[A]]~~ The method according to claim 1, ~~further characterised in that said TPC verification step comprises the step of weighing said pilot and data symbols. wherein said weighting comprises taking into account a power change in said data symbols due to a prior TPC change.~~

3. The method according to claim 1, ~~further characterised by~~ comprising encoding said data symbols using space-time transit diversity (STTD).

4. (Currently Amended) [[A]] The method according to claim 1, ~~further characterised in that~~ wherein interference is estimated from said pilot symbols.

5. (Currently Amended) [[A]] The method according to claim 4, ~~further characterised in that~~ the estimated interference is filtered.

6. (Currently Amended) [[A]] The method according to claim 1, ~~characterised in that~~ wherein the first unit is a base station and the second unit is a mobile unit.

7. (Currently Amended) [[A]] The method according to claim 1, ~~characterised in that~~ wherein the first unit is a mobile unit and the second unit is a base station.

8. (Currently Amended) A device ~~[[100]]~~ for estimating a signal to interference ratio (SIR) of a signal transmitted from a first unit and to a remotely located second unit in a Wideband Code Division Multiple Access (WCDMA) wireless communication system, said signal being transmitted through an air interface, ~~characterised in that~~ wherein said device comprises

a means for Transmit Power Control (TPC) verification ~~[[40]]~~ having an output signal, wherein said TPC verification means is arranged to weigh~~[[t]]~~ said pilot and data symbols and comprises means for determining if said TPC command have been correctly received; and

a means for SIR estimation, ~~[[50]]~~ and that using said output signal as input signal and being arranged to estimate the SIR estimation depending ~~[[s]]~~ on said output of said TPC verification unit.

9. (Currently Amended) ~~[[A]]~~ The device ~~[[100]]~~ according to claim 8, further characterised ~~in that~~ wherein said TPC verification unit weighs said pilot and data symbols.

10. (Currently Amended) ~~[[A]]~~ The device ~~[[100]]~~ according to claim 8, further characterised ~~in that~~ wherein said data symbols are encoded using space-time transmit diversity (STTD).

11. (Currently Amended) ~~[[A]]~~ The device ~~[[100]]~~ according to claim 8, characterised ~~by~~ further comprising a means for estimating interference from said pilot symbols.

12. (Currently Amended) ~~[[A]]~~ The device ~~[[100]]~~ according to claim 11, characterised ~~by~~ further comprising a filter for filtering said estimated interference.

13. (Currently Amended) ~~[[A]]~~ The device ~~[[100]]~~ according to claim 8, further characterised ~~in that~~ wherein the first unit is a base station and the second unit is a mobile unit.

14. (Currently Amended) ~~[[A]]~~ The device ~~[[ (100) ]]~~ according to claim 8, ~~further characterised in that~~ wherein the first unit is a mobile unit and the second unit is a base station.

15. (Currently Amended) A computer readable medium having a plurality of computer-executable instructions for performing the method according to claim 1, ~~characterised by comprising:~~

a program module for TPC verification giving instructions to a computer, and  
 a program module for SIR estimation giving instructions to a computer, depending on the Transmit Power Control (TPC) verification .

16. (New) The method according to claim 1, wherein said giving a SIR estimation depending on the result of said TPC verification comprises

if said TPC command has been correctly received, the estimated SIR at time  $n$  is given as

$$SIR_{est}^{(n)} = \frac{w_3 P_3^{(n-1)} \cdot 10^{0.1 \Delta_{TPC}} + w_1 P_1^{(n)} \cdot 10^{0.1 \Delta_{rel}} + w_2 P_2^{(n)}}{N^{(n)}} - 1$$

and if said TPC command has not been correctly received, the estimated SIR at time  $n$  is given as

$$SIR_{est}^{(n)} = \frac{w_3 P_3^{(n-1)} \cdot 10^{-0.1 \Delta_{TPC}} + w_1 P_1^{(n)} \cdot 10^{0.1 \Delta_{rel}} + w_2 P_2^{(n)}}{N^{(n)}} - 1 \quad ; \text{ where}$$

$$w_i \geq 0, \text{ for } i = 1, \dots, 3, P_i^{(n)}$$

is the average received power for the symbol or a subset of symbols in interval  $I_i^{(n)}$ ,  $N^{(n)}$  is the estimated interference at time  $n$ ,  $\Delta_{TPC}$  is a change of power in dB, resulting from a prior TPC command, and  $\Delta_{rel}$  is a relative power discrepancy between pilot and data symbols in dB.